

Claims

1. A fastener for members (M1, M2) to be clamped with a certain spacing therebetween, the fastener comprising a nut (10) having one end surface of a substantially cylindrical-shaped main body adapted to be latched by one (M1) of the members to be clamped, the nut being formed on an inner peripheral surface thereof with a first thread (13) comprising an internal thread capable of threading onto a thread of a bolt (40) and a second thread (14) comprising an internal thread inverse to thread ridges of the thread of the bolt and capable of threading onto a first thread (21) of a movable collar (20) comprising an external thread, which is formed on an outer peripheral surface of a substantially cylindrical-shaped main body of the movable collar (20) and is inverse to thread ridges of the thread of the bolt; the movable collar (20) having in an inner bore thereof a torque transmitting means capable of transmitting torque of the bolt, which is inserted axially into the inner bore, to the movable collar through thread-thread engagement; and the bolt (40) having a shank (42), on an outer peripheral surface of which is formed a thread comprising an external thread capable of threading into the first thread (13) of the nut; and wherein a portion of the thread of the bolt comprises special thread ridges (422), by which a frictional force greater than that obtained in engagement between normal threads is imparted to the thread-thread engagement.

2. The fastener according to claim 1, wherein the torque transmitting means is a second thread (22) comprising an internal thread formed on an inner peripheral surface of the movable collar (20) and capable of threading onto the thread of the bolt (40).

3. The fastener according to claim 1, wherein the torque transmitting means comprises a torque transmitting nut (30) with an outer peripheral surface thereof abuttingly received in the inner bore of the movable collar (20) to such an extent that rotation thereof about an axis thereof is substantially restricted, and a torque transmitting nut latch (23) comprising a cavity, a cross section of which is similar to the torque transmitting nut.

4. The fastener according to claim 2 or 3, wherein the special thread ridges (422) comprise thread ridges obtained by subjecting common thread ridges to compressive deformation in a diametrical direction.

5. The fastener according to claim 4, wherein a region where the special thread ridges (422) are formed is around 2 to 10 in terms of the number of thread ridges and around 10 to 90 degrees in terms of an angle about an axis.

6. The fastener according to claim 2 or 3, wherein the special thread ridges (422) have a greater pitch (P2) than a pitch (P1) of a common thread ridge or a less pitch (P3) than the pitch (P1) of the common thread ridge.

7. The fastener according to claim 6, wherein a region where the special thread ridges (422) are formed has a pitch (P2) or (P3) of around $\pm 20\%$ of (P1) and at least one thread ridge in + and - directions, respectively.

8. The fastener according to claim 2 or 3, wherein the special thread ridges (422) comprise a thin layer of a special nylon resin formed on a common thread ridge (421).

9. The fastener according to claim 2 or 3, wherein the special thread ridges (422) comprise a common thread ridge formed of an elastic body.

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10. The fastener according to claim 9, wherein the elastic body is formed of an elastomer resin.

11. The fastener according to claim 2 or 3, wherein the special thread ridges (422) are not provided and a part of thread ridges of a second thread (22) of the movable collar (20) or of a thread (31) of a torque transmitting nut (30) comprises thread ridges obtained by subjecting common thread ridges to compressive deformation in a diametrical direction.

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12. The fastener according to claim 11, wherein a region where the thread ridges obtained by subjecting the common thread ridges to compressive deformation in the diametrical direction are formed is around 2 to 10 in terms of the number of thread ridges and has around 10 to 90 degrees in terms of an angle about an axis.

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13. The fastener according to claim 2 or 3, wherein the special thread ridges (422) are not provided and a part of thread ridges of a second thread (22) of the movable collar (20) or of a thread (31) of a torque transmitting nut (30) has a greater pitch (P2) than a pitch (P1) of a common thread ridge or a less pitch (P3) than the pitch (P1) of the common thread ridge.

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14. The fastener according to claim 13, wherein a region where the thread ridges having a greater pitch (P2) than a pitch (P1) of the common thread ridges or a less pitch

(P3) than the pitch (P1) of the common thread ridges are formed has a pitch (P2) or (P3) of around $\pm 20\%$ of (P1) and at least one thread ridge in + and - directions, respectively.

5 15. The fastener according to claim 2 or 3, wherein the special thread ridges (422) are not provided and thread ridges of a second thread (22) of the movable collar (20) or of a thread (31) of a torque transmitting nut (30) is formed thereon with a thin layer of a special nylon resin.

10 16. The fastener according to claim 2 or 3, wherein the special thread ridges (422) are not provided and a part of thread ridges of a second thread (22) of the movable collar (20) or of a thread (31) of a torque transmitting nut (30) comprises common thread ridges formed of an elastic body.

15 17. The fastener according to claim 16, wherein the elastic body is formed of an elastomer resin.

20 18. The fastener according to claim 2 or 3, wherein the special thread ridges (422) of the bolt (40) comprise thread ridges obtained by subjecting common thread ridges to compressive deformation in a diametrical direction, and said special thread ridges are additionally formed in either of
25 the second thread (14) of the nut or the first thread (21) of the movable collar within a range over which they can be threaded each other at the time of completion of clamping.

30 19. The fastener according to claim 18, wherein a region where the special thread ridges (422) are formed is around 2 to 10 in terms of the number of thread ridges and around 10 to 90 degrees in terms of an angle about an axis.

20. The fastener according to claim 2 or 3, wherein the special thread ridges (422) of the bolt (40) have a greater pitch (P2) than a pitch (P1) of a common thread ridge or a less pitch (P3) than the pitch (P1) of the common thread
5 ridge, and said special thread ridges are additionally formed in either of the second thread (14) of the nut or the first thread (21) of the movable collar within a range over which they can be threaded each other at the time of completion of clamping.

10 21. The fastener according to claim 20, wherein a region where the special thread ridges (422) of the bolt (40) are formed has a pitch (P2) or (P3) of around $\pm 20\%$ of (P1) and at least one thread ridge in + and - directions,
15 respectively.

20 22. The fastener according to claim 2 or 3, wherein the special thread ridges (422) comprise a thin layer of a special nylon resin formed on a common thread ridge (421), and said special thread ridges are additionally formed in
either of the second thread (14) of the nut or the first thread (21) of the movable collar within a range over which they can be threaded each other at the time of completion of clamping.

25 23. The fastener according to claim 2 or 3, wherein the special thread ridges (422) comprise a common thread ridge formed of an elastic body, and said special thread ridges are additionally formed in either of the second thread (14) of
30 the nut or the first thread (21) of the movable collar within a range over which they can be threaded each other at the time of completion of clamping.

24. The fastener according to claim 23, wherein the elastic body is formed of an elastomer resin.

1. The first part of the document is a list of names and their corresponding addresses. The names are: "The First National Bank", "The Second National Bank", "The Third National Bank", "The Fourth National Bank", "The Fifth National Bank", "The Sixth National Bank", "The Seventh National Bank", "The Eighth National Bank", "The Ninth National Bank", "The Tenth National Bank", "The Eleventh National Bank", "The Twelfth National Bank", "The Thirteenth National Bank", "The Fourteenth National Bank", "The Fifteenth National Bank", "The Sixteenth National Bank", "The Seventeenth National Bank", "The Eighteenth National Bank", "The Nineteenth National Bank", "The Twentieth National Bank", "The Twenty-first National Bank", "The Twenty-second National Bank", "The Twenty-third National Bank", "The Twenty-fourth National Bank", "The Twenty-fifth National Bank", "The Twenty-sixth National Bank", "The Twenty-seventh National Bank", "The Twenty-eighth National Bank", "The Twenty-ninth National Bank", "The Thirtieth National Bank", "The Thirty-first National Bank", "The Thirty-second National Bank", "The Thirty-third National Bank", "The Thirty-fourth National Bank", "The Thirty-fifth National Bank", "The Thirty-sixth National Bank", "The Thirty-seventh National Bank", "The Thirty-eighth National Bank", "The Thirty-ninth National Bank", "The Fortieth National Bank", "The Forty-first National Bank", "The Forty-second National Bank", "The Forty-third National Bank", "The Forty-fourth National Bank", "The Forty-fifth National Bank", "The Forty-sixth National Bank", "The Forty-seventh National Bank", "The Forty-eighth National Bank", "The Forty-ninth National Bank", "The Fiftieth National Bank", "The Fifty-first National Bank", "The Fifty-second National Bank", "The Fifty-third National Bank", "The Fifty-fourth National Bank", "The Fifty-fifth National Bank", "The Fifty-sixth National Bank", "The Fifty-seventh National Bank", "The Fifty-eighth National Bank", "The Fifty-ninth National Bank", "The Sixtieth National Bank", "The Sixty-first National Bank", "The Sixty-second National Bank", "The Sixty-third National Bank", "The Sixty-fourth National Bank", "The Sixty-fifth National Bank", "The Sixty-sixth National Bank", "The Sixty-seventh National Bank", "The Sixty-eighth National Bank", "The Sixty-ninth National Bank", "The Seventieth National Bank", "The Seventy-first National Bank", "The Seventy-second National Bank", "The Seventy-third National Bank", "The Seventy-fourth National Bank", "The Seventy-fifth National Bank", "The Seventy-sixth National Bank", "The Seventy-seventh National Bank", "The Seventy-eighth National Bank", "The Seventy-ninth National Bank", "The Eightieth National Bank", "The Eighty-first National Bank", "The Eighty-second National Bank", "The Eighty-third National Bank", "The Eighty-fourth National Bank", "The Eighty-fifth National Bank", "The Eighty-sixth National Bank", "The Eighty-seventh National Bank", "The Eighty-eighth National Bank", "The Eighty-ninth National Bank", "The Ninetieth National Bank", "The Ninety-first National Bank", "The Ninety-second National Bank", "The Ninety-third National Bank", "The Ninety-fourth National Bank", "The Ninety-fifth National Bank", "The Ninety-sixth National Bank", "The Ninety-seventh National Bank", "The Ninety-eighth National Bank", "The Ninety-ninth National Bank", "The One Hundredth National Bank".